APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,254	03/03/2004	David John Steeves	MSFT-2934 / 306552.01	3966

41505   7590   04/24/2009
WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER
KRISHNAN, VIVEK V

ART UNIT	PAPER NUMBER
2445	

MAIL DATE	DELIVERY MODE
04/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/792,254	STEEVES, DAVID JOHN
	Examiner	**Art Unit**	
	Vivek Krishnan	2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _16 January 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-9,11-17,19-25 and 27-31_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,3-9,11-17,19-25 and 27-31_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

This action is responsive to the Amendment/Arguments filed on January 16, 2009. Claims 2, 10, and 18 have been cancelled. Claims 1, 3, 9, 17, and 25 have been amended. Claims 1, 3-9, 11-17, 19-25, and 27-31 are pending.

Response to Arguments

1.   Applicant's arguments with respect to Claim Rejections under 35 U.S.C. 103(a) have been fully considered.

As to Applicant's arguments with respect to Claims 1, 9, 17, and 25:

    a. Applicant argues that Weaver does not disclose wherein traversed addresses of the second set of addresses are excluded from the specified range of addresses.

    Examiner respectfully disagrees. Weaver, in New Infection Strategies – page 4, paragraph 7, describes partitioned permutation scan where the newly infected worm takes a range of addresses that exclude the range the original worm traverses.

    b. Applicant argues that Weaver does not disclose that a primitive element is selected using a primitive polynomial.

    Applicant's arguments are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1, 3-9, 11-17, 19-25, and 27-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over <u>Warhol Worms: The Potential for Very Fast Internet Plagues</u> to Weaver

(hereinafter "Weaver") (IDS submitted December 17, 2007) and in further view of <u>Simulating</u>

<u>and Optimizing Worm Propagation Algorithms</u> to Vogt (hereinafter "Vogt") (IDS submitted

December 17, 2007) and U.S. Patent No. 5,377,207 to Perlman (hereinafter "Perlman").

4.   As to Claims 1, 9, and 17, Weaver discloses a method, system, and computer readable

medium bearing computer readable instructions (referenced hereinafter as the method) for

propagating data over a network, comprising:

        determining a sequential first set of network addresses (Weaver; New Infection

Strategies, discloses determining a sequential first set of network addresses; i.e. the IP address

space);

        mapping a range of addresses in the sequential first set of network addresses to a second

set of addresses wherein the second set of addresses is a one to one mapping of the address from

the first set and wherein the addresses in the second set are not in increasing address order

(Weaver; New Infection Strategies, discloses a one to one mapping of the first set of addresses to

a second set of addresses by generating a permutation of the first set of addresses) (see also

Laplante – Dictionary of Computer Science Engineering and Technology; for a definition of

permutation as a rearrangement of elements where none are lost, added, or changed, in this case,

a rearrangement of the IP address space);

traversing the second set of addresses to find another element of the network (Weaver;

Active Worms, Existing Infection Strategies, and New Infection Strategies, discloses a

permutation scan where the permutation, or second set, of addresses is traversed to find another

element of the network);

transferring the data to the another element of the network along with an indication of at

least a portion of the addresses remaining in the second set […] (Weaver; New Infection

Strategies, discloses transferring the data and a portion of the addresses remaining in the second

set to another element of the network).

Weaver (New Infection Strategies) discloses a partitioned permutation scan where a

range of addresses in the permutation are transferred to another element. Hence, Weaver

discloses transferring the data to the another element of the network and specifying a range of

addresses in the second set of addresses. Weaver's disclosure implies but is not explicit

regarding providing the indication of at least a portion of the addresses. Vogt, however,

discloses transferring the data to the another element of the network along with an indication of

at least a portion of the addresses remaining in the second set by specifying a range of addresses

in the second set of addresses (Vogt; 4.4 Subdividing, transferring data to another element of the

network with an indication of a portion of addresses by specifying a range of addresses).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify, transferring data to another element, as disclosed by Weaver, to include

transferring the data by providing an indication of a portion of addresses, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been

motivated to make this combination in order to provide faster propagation of software over an

address space (Vogt; 4.4 Subdividing).

Weaver further discloses wherein traversed addresses of the second set of addresses are

excluded from the specified range of addresses (Weaver; New Infection Strategies; the newly

infected worm takes a range of addresses that exclude the range the original worm traverses).

Weaver does not explicitly disclose, however Perlman discloses that the mapping

function is based on a primitive element selected using a primitive polynomial (Perlman;

Abstract and column 13 lines 6-21).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify a permutation of a range of address, as disclosed by Weaver, to include

using a primitive element selected using a primitive polynomial to perform the permutation, as

disclosed by Perlman, in order to apply known methods of performing permutations.

5.   As to Claims 3, 11, and 19, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 1, 9, and 17. Vogt further discloses traversing the second set of

addresses to find a second element of the computer network and transferring the data to the

second element of the computer network and an indication of at least a second portion of the

addresses remaining in the second set that have not been traversed (Vogt; 4.4 Subdividing,

discloses traversing a set of addresses to find a second element of the computer network and

transferring the data to the second element with an indication of a second portion of the

addresses remaining in the set that have not been traversed).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify, traversing a set of addresses to find an element and transferring to the

element data with an indication of a portion of addresses in the set, as disclosed by Weaver, to

include finding and transferring data with a second portion of addresses remaining in the set that

have not been traversed to another element, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been

motivated to make this combination in order to provide a more efficient method of propagating

software over an address space (Vogt; 4.4 Subdividing).

6.   As to Claims 4, 12, and 20, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 1, 9, and 17. Weaver further discloses the indication of the at least a

portion of the addresses remaining comprises a function used to perform that mapping (Weaver;

New Infection Strategies, discloses the indication includes the permutation scan algorithm

applied by each worm).

7.   As to Claims 5, 13, and 21, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 1, 9, and 17. Weaver further discloses the network comprises Internet

Protocol addresses (Weaver; New Infection Strategies, discloses the network comprising IP

addresses).

8.   As to Claims 6, 14, and 22, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 5, 13, and 21. Weaver further discloses the network is coupled to the

Internet (Weaver; New Infection Strategies, discloses the network is coupled to the Internet).

9.   As to Claims 7, 15, and 23, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 5, 13, and 21. Weaver further discloses the network comprises a

subnet (Weaver; New Infection Strategies, discloses the network comprises a subnet).

10.   As to Claims 8, 16, and 24, Weaver, Vogt, and Perlman in combination disclose each and

every limitation of Claims 1, 9, and 17. Weaver further discloses the element of the computer

network comprises a computing device (Weaver; New Infection Strategies, discloses the element

of the network is a computing device).

11.   As to Claim 25, Weaver discloses:

        (a) determining a sequential first set of network addresses (Weaver; New Infection

Strategies, discloses determining a sequential first set of network addresses; i.e. the IP address

space));

        (b) mapping a range of addresses in the sequential first set of network addresses to a

second set of addresses wherein the second set of addresses is a one to one pseudo-random

mapping of the range of addresses in the first set and wherein the addresses in the second set are not in increasing address order wherein the mapping is a function based on […] a primitive element (Weaver; New Infection Strategies, discloses a one to one mapping of the first set of addresses to a second set of addresses by generating a permutation of the first set of addresses) (see also Laplante – Dictionary of Computer Science Engineering and Technology; for a definition of permutation as a rearrangement of elements where none are lost, added, or changed, in this case, a rearrangement of the IP address space) (Weaver; New Infection Strategies, discloses the permutation is based on a preselected key);

Weaver does not explicitly disclose, however Perlman discloses that the mapping function is based on powers of a primitive element selected using a primitive polynomial (Perlman; Abstract and column 13 lines 6-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a permutation of a range of address, as disclosed by Weaver, to include using powers of a primitive element selected using a primitive polynomial to perform the permutation, as disclosed by Perlman, in order to apply known methods of performing permutations.

Weaver does not explicitly disclose, however Vogt discloses:

(c) traversing the second set of addresses to locate at least two other elements of the network (Vogt; 4.4 Subdividing, discloses traversing a set of addresses to locate two elements of a network);

(d) subdividing the addresses of the second set of addresses that were not traversed in act (c) into a plurality of portions, wherein addresses of the second set of addresses that were traversed in act (c) are excluded from the portions (Vogt; 4.4 Subdividing; the range of addresses sent are the addresses the parent traversed plus 1, i.e. the traversed addresses are excluded);

(e) transferring a set of computer readable instructions to the at least two other elements of the network to carry out a distributed computing function (Vogt; 4.4 Subdividing, discloses transferring the worm and propagation algorithm to at least two other elements of the network) (see also Weaver; Abstract and New Infection Strategies, discloses the worm, which comprises self executing instructions, propagating through address space by transferring copies of itself to other elements of the network); and

(f) transferring an indication of at least a portion of the addresses remaining in the second set by specifying a range of addresses in the second set of addresses along with a set of computer-readable instructions for carrying out acts (a) through (e) to a respective element of the at least two other elements (Vogt; 4.4 Subdividing, discloses transferring, to the two elements, the worm along with an indication of a portion of addresses remaining in the second set by specifying a range of addresses, in this case, half the address space) (see also Weaver; Abstract and New Infection Strategies, discloses the worm, which comprises self executing instructions, propagating through address space by transferring copies of itself to other elements of the network with an indication of a portion of addresses remaining in the permutation, or second set, of addresses).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify determining and mapping, as disclosed by Weaver, to include traversing and transferring to at least two other element, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been motivated to make this combination in order to provide faster propagation of software over an address space (Vogt; 4.4 Subdividing).

12.   As to Claim 27, Weaver, Vogt, and Perlman in combination disclose each and every limitation of Claim 25. Weaver further discloses the indication of the at least a portion of the addresses remaining comprises a function used to perform that mapping (Weaver; New Infection Strategies, discloses the indication includes the permutation scan algorithm applied by each worm).

13.   As to Claim 28, Weaver, Vogt, and Perlman in combination disclose each and every limitation of Claim 25. Weaver further discloses the network comprises Internet Protocol addresses (Weaver; New Infection Strategies, discloses the network comprising IP addresses).

14.   As to Claim 29, Weaver, Vogt, and Perlman in combination disclose each and every limitation of Claim 25.   Weaver further discloses the network is coupled to the Internet (Weaver; New Infection Strategies, discloses the network is coupled to the Internet).

15.   As to Claim 30, Weaver, Vogt, and Perlman in combination disclose each and every

limitation of Claim 25.   Weaver further discloses the network comprises a subnet (Weaver; New

Infection Strategies, discloses the network comprises a subnet).

16.   As to Claim 31, Weaver, Vogt, and Perlman in combination disclose each and every

limitation of Claim 25. Weaver further discloses the element of the computer network comprises

a computing device (Weaver; New Infection Strategies, discloses the element of the network is a

computing device).

Conclusion

17.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Krishnan whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 276-9456. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. K./
Examiner, Art Unit 2445

/Patrice Winder/
Primary Examiner, Art Unit 2445